ASSIGNMENT 10

Textbook Asignment: "Magnetic Tape Storage," chapter 9, pages 9-1 through 9-21.

10-1. Which of the following types of storage is used to store large amounts of data that are not required by the computer on a regular basis?

1. Main memory storage
2. Secondary memory storage
3. Tertiary memory storage
4. Thin film memory storage

10-2. Magnetic tape can be used to store large amounts of data in a variety of convenient package sizes.

1. True
2. False

10-3. Which of the following materials can be used as a base for magnetic tape?

1. Plastic
2. Iron oxide
3. Rubber
4. Paper

10-4. Which of the following materials can be used to form the oxide coating of a magnetic tape?

1. Gamma ferric oxide only
2. Chromium dioxide only
3. Gamma ferric oxide and chromium dioxide
4. Plastic

10-5. Which of the following procedures should NOT be used when magnetic tapes are handled?

1. Keep unused tapes in dustproof containers
2. Keep containers free of dust and contaminants
3. Store tapes in electromagnetically shielded cabinets
4. Store tapes on the top of equipment

10-6. To identify magnetic tapes, use adhesive labels with which of the following characteristics?

1. Easily erasable
2. Adhere permanently to tape containers
3. Both 1 and 2 above
4. Easily removable without leaving a residue

10-7. You should store tapes in the same room where they are to be used for which of the following reasons?

1. To reduce handling only
2. To prevent variations in environmental conditions only
3. To reduce handling and to prevent variations in environmental conditions
4. To decrease the time needed to find the tape

10-8. When you receive a new tape, which of the following actions, if any, should you take?

1. Immediately mount the tape on a drive to read the information
2. Condition the tape to the environment in which it is to be used
3. Copy the tape as soon as you receive it
4. None; no special action is required

10-9. What effect, if any, may result if you touch the magnetic oxide of a tape?

1. The oils and acids from your skin could damage the tape
2. Your fingers could turn brown from picking up bits of the oxide
3. None; no effect

10-10. A tape cleaner performs which of the following actions?

1. It shaves the oxide of the tape only
2. It wipes down both sides of the tape with a cleaning solution only
3. It first shaves the oxide side of the tape, then it wipes down both sides of the tape with a cleaning solution
4. It alters the flux patterns on the tape

10-11. Which of the following maintenance actions reduces the static buildup on open reel magnetic tapes?

1. Degaussing
2. Cleaning
3. Certifying
4. Stripping

10-12. A tape certifier performs all of the following tasks except which one?

1. Cleans the tape
2. Erases the tape
3. Checks the tape's ability to record high density data, to retain magnetic flux patterns, and to be demagnetized
4. Restores the original data to the tape

10-13. For a tape that cannot be certified, what action, if any, should you take?

1. Destroy it
2. Keep it for use as a scratch tape only
3. Put it into general use because the standards of a tape certifier are higher than they need to be
4. None; no action is required

10-14. To nullify all the magnetic flux patterns is the sole purpose of which of the following machines?

1. A cleaner
2. A stripper
3. A degausser
4. A certifier

10-15. What area of a magnetic tape tends to show the greatest amount of wear?

1. The area just after BOT
2. The area just before EOT
3. The interrecord gap area
4. The file mark

10-16. To correct a tape's worn or damaged areas, which of the following actions should you take?

1. Degaussing
2. Cleaning
3. Stripping
4. Splicing

10-17. After stripping a magnetic tape, what is the minimum length of tape you should leave on the reel?

1. 500 feet
2. 400 feet
3. 300 feet
4. 200 feet

10-18. You should NOT splice a tape for which of the following reasons?

1. Tape splices are generally the weakest point on the tape
2. Read and write operations may not perform properly in the area of the splice
3. Splicing a broken tape usually will not save the data
4. All of the above

10-19. All tape media used in a system must be accounted for in which of the following ways?

1. Listed
2. Labeled only
3. Numbered only
4. Labeled and numbered

10-20. An operational program tape being delivered to a system is considered which of the following types of tape?

1. New
2. Used
3. Master
4. Scratch

10-21. A tape containing data that maybe written over is called what type of tape?

1. New
2. Used
3. Master
4. Scratch

10-22. Master tapes must be protected from which of the following operations?

1. Read
2. Write
3. Copy
4. Duplication

10-23. Tapes generated from a master tape are referred to by which of the following terms?

1. New
2. Used
3. Working copies
4. Scratch

A. Submit the tape for stripping or cleaning/ certifying.
B. Make a new working copy from the master.
C. Remove the tape from the unit and clean the transport.
D. Attempt to read or write the tape on different transport.
E. Align the magnetic tape transport.

Figure 10-A—Magnetic tape maintenance actions.

IN ANSWERING QUESTIONS 10-24 THROUGH 10-26, SELECT FROM FIGURE 10-A THE PROPER MAINTENANCE ACTION TO CORRECT THE PROBLEM DESCRIBED IN THE QUESTION.

10-24. A working copy receives read errors from several tape transports.

1. A
2. B
3. C
4. D

10-25. The tape has visible damage.

1. A
2. B
3. D
4. E

10-26. A tape reads properly from all transports except one.

1. A
2. B
3. D
4. E

10-27. What is the form taken by a tape after it has been wound on a reel?

1. Tape
2. Tape deck
3. Tape roll
4. Tape pack

10-28. What winding error causes steps to be observed in the tape pack?

1. Windowing
2. Spoking
3. Pack slip
4. Cinching

10-29. What tape condition is caused when a loosely wound tape is exposed to extreme heat or humidity?

1. Windowing
2. Spoking
3. Pack slip
4. Cinching

10-30. What tape condition is caused when tension is increased toward the end of the winding operation?

1. Windowing
2. Spoking
3. Pack slip
4. Cinching

10-31. Storage of data using a magnetic tape unit is based on which of the following principles?

1. Current flow in a conductor can be generated by a change in the magnetic lines of force that cut through a conductor
2. Changing the current flow in a conductor creates a change in the magnetic lines of force radiating from the conductor
3. Both 1 and 2 above
4. Current flow cannot be created by moving a conductor through a magnetic field

10-32. The electromagnetic-type conductor used to create a magnetic spot on a magnetic tape is called a

1. read head
2. write head
3. flux pattern
4. magnetic oxide

10-33. A magnetic spot recorded on a magnetic surface may be sensed by an electromagnetic-type conductor called a

1. read head
2. write head
3. flux pattern
4. magnetic oxide

10-34. Data stored on a magnetic surface may only be read once.

1. True
2. False

10-35. A flux pattern magnetized in one direction to indicate a binary ONE and the opposite direction to indicate a binary ZERO is a characteristic of which of the following recording techniques?

1. Return-to-zero
2. Non-return-to-zero
3. Phase encoding

10-36. Using narrow current spikes to write small flux patterns is a characteristic of which of the following recording techniques?

1. Return-to-zero
2. Non-return-to-zero
3. Phase encoding

10-37. A binary ONE indicated by a change in flux direction is a characteristic of which of the following recording techniques?

1. Return-to-zero
2. Non-return-to-zero
3. Phase encoding

10-38. What recording technique, if any, provides for the highest data density?

1. Return-to-zero
2. Non-return-to-zero
3. Phase encoding
4. None; they all provide the same density

10-39. An invisible line on a tape where data is written or read a bit at a time is called a

1. file
2. frame
3. record
4. track

10-40. Data bits written concurrently across the width of the tape are called a

1. file
2. frame
3. record
4. track

10-41. Which of the following terms indicates the density of data stored on multitrack tape?

1. Bits per inch
2. Characters per inch
3. Frames per inch
4. Records per inch

10-42. A nine-track magnetic tape contains (a) what number of data bits and (b) what number of parity bits?

1. (a) 7 (b) 2
2. (a) 8 (b) 1
3. (a) 9 (b) 1
4. (a) 9 (b) O

10-43. In which of the following recording techniques is the presence of a frame indicated by the detection of a binary ONE?

1. Return-to-zero
2. Phase encoding
3. Non-return-to-zero
4. Non-return-to-zero indiscrete

10-44. When writing or searching for data, which of the following tape markings is a common starting point used by a system?

1. BOT
2. EOT
3. Both 1 and 2 above
4. IRG

10-45. Data cannot be written or read under which of the following conditions?

1. The tape is stopped
2. The tape is just starting to move
3. The tape is stopping movement
4. All of the above

10-46. The start/stop effect creates a blank spot on the tape until which of the following conditions is met?

1. The tape is up to speed
2. The tape is stopped
3. The tape is starting to move
4. The tape is stopping movement

10-47. A group of contiguous frames is called a

1. file
2. record
3. software
4. track

10-48. Record length is fixed by the magnetic tape device.

1. True
2. False

10-49. A file can be defined as a group of

1. bits
2. characters
3. frames
4. records

10-50. Every file on a tape ends with a

1. file mark
2. interrecord gap
3. parity bit
4. record

10-51. Which of the following parity checks uses each frame's parity bit?

1. Odd
2. Even
3. Lateral
4. Longitudinal

10-52. The parity bit in a seven-track frame consisting of 011101 is a ONE for which of the following parity formats?

1. Odd
2. Even
3. Lateral
4. Longitudinal

10-53. Odd parity is commonly used with non-return-to-zero indiscrete recording for what purpose?

1. File mark
2. Frame identification
3. Interrecord timing
4. Tape speed

10-54. Which of the following parity checks uses a check frame?

1. Odd
2. Even
3. Lateral
4. Longitudinal

10-55. Each bit in the check frame contains the parity bit for all the ONEs in a particular

1. file
2. frame
3. record
4. track

10-56. Which of the following is NOT a function of the magnetic tape controller?

1. Receives data and commands from the computer
2. Reformats data into frame-size bytes
3. Detects BOT
4. Checks parity

10-57. What is the tape speed for all read, write, and search operations, in inches per second?

1. 100
2. 120
3. 180
4. 200

10-58. Tapes without a write-enabling ring are protected from the write operation.

1. True
2. False

10-59. What MTU operation compares the first word of each record to a specified key?

1. Read
2. Search
3. Space file
4. Write

10-60. During a rewind operation, what signal will cause tape motion to stop?

1. BOT
2. EOT
3. Low tape
4. Start of file tape mark

10-61. MTU operations that can be performed offline using the microprogrammed controller (MPC) are determined by the MPC program installed by the

1. operator
2. computer
3. manufacturer
4. maintenance technician

10-62. What functional area of a magnetic tape unit decodes external function words from the computer?

1. System control panel
2. Maintenance panel
3. Magnetic tape transport
4. Control unit

10-63. The MPC transmits data via which of the following data buses?

1. Source bus only
2. Destination bus only
3. Source and destination buses
4. ROM bus only

10-64. Which of the following control unit functions is NOT performed by the MPC?

1. Frame count checking for lost frames
2. Start/stop delay initiation
3. Read/write signal amplification
4. Search operations comparisons

10-65. Which of the following components contains controls and indicators for manual offline operations?

1. The maintenance panel
2. The system control panel
3. The magnetic tape transport
4. The microprogrammed controller

10-66. Which of the following components contains the controls and indicators for primary power and tape transport manual control?

1. The maintenance panel
2. The system control panel
3. The magnetic tape transport
4. The microprogrammed controller

10-67. Of the following operations, which one is NOT performed by the magnetic tape transport (MTT) control section?

1. Providing control signals for manual operations of the MTT
2. Acting as an interface for MTU control signals and status responses
3. Sending signals to light the MTT switch panel indicators
4. Providing timing pulses and a servo-movement control signal to the capstan

10-68. The direction and speed of the supply and take-up servo motors are controlled by which of the following factors?

1. The size of the tape loop in the vacuum column
2. The direction and speed of the capstan motor
3. The capstan tachometer
4. The function being performed

10-69. Which of the following MTT sections controls the speed and direction of tape movement?

1. Air control solenoids
2. Capstan servo-control
3. Supply reel servo-control
4. Take-up reel servo-control

10-70. The supply and take-up reel servo-driven hubs attempt to maintain the tape loops in which of the following positions as shown in figure 10-20?

1. Above sensor A
2. Below sensor D
3. Between sensors B and C
4. Between sensors A and D

10-71. The speed and direction of the servo-driven hubs are controlled by all of the following conditions except which one?

1. Capstan direction and velocity
2. Reel tachometer input
3. Vacuum/pressure sensors in the buffer columns
4. Read or write operation being performed

10-72. Which of the following diagnostic programs is/are controlled by the MPC ROM?

1. POFA
2. PEFT
3. Internal diagnostics
4. All of the above

10-73. Which of the following diagnostic programs is/are run under the control of the operational program?

1. POFA
2. PEFT
3. Internal diagnostics
4. All of the above

10-74. Which of the following POFA tests checks the ability of the MTU to respond to computer commands and to provide status and error condition information to the computer?

1. The duplex test
2. The extended operation test
3. The function and format test
4. The transport compatibility test

10-75. Which of the following POFA tests checks the MTU's ability to read the same tape on several MTTs?

1. The duplex test
2. The extended operations test
3. The function and format test
4. The transport compatibility test